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UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/041,715	01/08/2002	Mikko Kanerva	915.419	5318

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EXAMINER
DEAN, RAYMOND S

ART UNIT	PAPER NUMBER
2684	

DATE MAILED: 04/07/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

PTO-90C (Rev. 10/03)

<table>
<tr><td rowspan="2">Office Action Summary</td><td>Application No.</td><td>Applicant(s)</td><td></td></tr>
<tr><td>10/041,715</td><td>KANERVA, MIKKO</td><td></td></tr>
<tr><td></td><td>Examiner</td><td>Art Unit</td><td></td></tr>
<tr><td></td><td>Raymond S Dean</td><td>2684</td><td></td></tr>
</table>

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on <u>October 13, 2004</u>.

2a)☒ This action is **FINAL.**   2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) <u>1 - 28</u> is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) <u>1 - 28</u> is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on <u>08 January 2002</u> is/are: a)☒ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☒ All b)☐ Some * c)☐ None of:

      1.☒ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☒ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
    Paper No(s)/Mail Date _____.

4)☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____ .

5)☐ Notice of Informal Patent Application (PTO-152)

6)☐ Other: _____ .

DETAILED ACTION

Response to Arguments

1.   Applicant's arguments filed October 13, 2004 regarding the rejection of Claims 1

– 28 under 35 U.S.C. 103 have been fully considered but they are not persuasive.

Examiner respectfully disagrees with Applicant's assertion that Acampora

teaches away form scheduling a data communication dynamically in accordance with

the available capacity of the network at the current and future locations of the mobile

station when the mobile station moves in the network. Acampora, as stated in the office

action dated July 13, 2004, teaches a mobile station that can move throughout the

cluster of cells thus there will be, at any point in time, a current serving cell and a future

serving cell to which said mobile station will move. The mobile station will be admitted

or rejected based on the capacity of the network at current and future locations (See

Column 3 lines 24 – 55). When the mobile is admitted said mobile will need to be

scheduled to be admitted thus Acampora also teaches scheduling.

Examiner agrees with Applicant's assertion that Acampora does not teach a

mobile station moving in the network that already has set up a call; however, Applicant

did not claim the particular limitation of a mobile station that has already set up a call.

Examiner agrees with Applicant's assertion that Acampora does not teach

prioritizing and delaying the data communications to or from the mobile station.

Kadoshima, however, teaches prioritizing and delaying the communications of the

mobile station (See Column 17 lines 43 – 50). It would have been obvious to one of

ordinary skill in the art at the time the invention was made to use the prioritizing and

delaying method taught in Kadoshima in the wireless system of Acampora for the

purpose of enabling a mobile user to communicate with a destination mobile terminal in

an emergency despite congestion in the wireless network as taught by Kadoshima.

Wieczorek teaches tracking the locations of a mobile station moving in the cellular

telecommunication network (Column 3 lines 25 – 31). It would have been obvious to

one of ordinary skill in the art at the time the invention was made to use the tracking

method taught in Wieczorek in the wireless system of Acampora for the purpose of

enabling the allocation of communication resources to accommodate differing loading

conditions as mobile units move within a coverage area supported by different server

sites as taught by Wieczorek.

Claim Rejections - 35 USC § 103

2.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set
> forth in section 102 of this title, if the differences between the subject matter sought to be patented and
> the prior art are such that the subject matter as a whole would have been obvious at the time the
> invention was made to a person having ordinary skill in the art to which said subject matter pertains.
> Patentability shall not be negatived by the manner in which the invention was made.

3.   Claims 1 – 28 are rejected under 35 U.S.C. 103(a) as being unpatentable over

Acampora et al. (5,497,504) in view of Wieczorek et al. (6,125,278) and in further view

of Kadoshima et al. (6,526,282).

Regarding Claim 1, Acampora teaches a method of communicating data in a cellular telecommunication network in which the available capacity is not uniformly distributed, comprising the steps of: scheduling the data communication to or from the mobile station in accordance with the available capacity of the network at the current and future locations of the mobile station (Column 3 lines 24 – 55, since the mobile station can move throughout the cluster of cells there can be, at any point in time, a current serving cell for said mobile station and a future serving cell to which said mobile station will move), wherein the data communication to or from the mobile station at the current location of the mobile station is not scheduled when the available capacity at future locations is less than that at the current location (Column 3 lines 24 – 55, the capacity of the whole cell cluster comprises the capacity at the current location or cell of the mobile station and the capacity at the other locations or cells, which are the future locations of said mobile station moving within said cell cluster), and wherein the data communication to or from the mobile station at the current location of the mobile station is scheduled when the available capacity at future locations is higher than that at the current location (Column 3 lines 24 – 55, the capacity of the whole cell cluster comprises the capacity at the current location or cell of the mobile station and the capacity at the other locations or cells, which are the future locations of said mobile station moving within said cell cluster).

Acampora does not teach tracking the locations of a mobile station moving in the cellular telecommunication network.

Wieczorek teaches tracking the locations of a mobile station moving in the cellular telecommunication network (Column 3 lines 25 – 31).

Acampora and Wieczorek both teach a wireless cellular system thus it would have been obvious to one of ordinary skill in the art at the time the invention was made to use the tracking method taught above in Wieczorek in the wireless system of Acampora for the purpose of enabling the allocation of communication resources to accommodate differing loading conditions as mobile units move within a coverage area supported by different server sites.

Acampora in view of Wieczorek does not teach the prioritizing and delaying the mobile station.

Kadoshima teaches prioritizing and delaying the mobile station (Column 17 lines 43 – 50, the mobile station with the highest priority will be allowed to place a call first when the network is congested and the mobile stations with the lower priorities will be allowed to place a call later than or after the highest priority mobile station thus said lower priority mobile stations will be delayed in placing calls during network congestion).

Acampora in view of Wieczorek and Kadoshima teach a wireless cellular system thus it would have been obvious to one of ordinary skill in the art at the time the invention was made to use the prioritizing and delaying method taught in Kadoshima in the wireless system of Acampora in view of Wieczorek for the purpose of enabling a mobile user to communicate with a destination mobile terminal in an emergency despite congestion in the wireless network.

Regarding Claim 2, Acampora in view of Wieczorek and in further view Kadoshima teaches all of the claimed limitations recited in Claim 1. Wieczorek further teaches estimating the future locations of the mobile station on the basis of the locations tracked in the tracking step (Column 3 lines 56 – 64).

Regarding Claim 3, Acampora in view of Wieczorek and in further view Kadoshima teaches all of the claimed limitations recited in Claim 1. Wieczorek further teaches estimating the future locations of the mobile station on the basis of route information about the moving mobile station provided by the mobile station (Column 3 lines 32 – 37).

Regarding Claim 4, Acampora in view of Wieczorek and in further view Kadoshima teaches all of the claimed limitations recited in Claim 1. Wieczorek further teaches estimating (S12) the future locations of the mobile station on the basis of movement patterns of the mobile station (Column 3 lines 56 – 64, the location history is a history of the movement patterns of the mobile station).

Regarding Claim 5, Acampora in view of Wieczorek and in further view Kadoshima teaches all of the claimed limitations recited in Claim 1. Wieczorek further teaches estimating (S13) the available capacity of the network at the current and future locations of the mobile station on the basis of an estimated current and future traffic load distribution of the network in the area in which and towards the mobile station is moving (Column 2 lines 64 – 67, Column 3 line 1, Column 3 lines 65 – 67, the system estimates the loading conditions at the future site such that there will be proper allocation of communication resources).

Regarding Claim 6, Acampora in view of Wieczorek and in further view Kadoshima teaches all of the claimed limitations recited in Claim 5. Acampora further teaches wherein the area comprises cells, groups of cells, geographical areas and network nodes (Figure 1, the base stations (17a – 17n) are the network nodes).

Regarding Claim 7, Acampora in view of Wieczorek and in further view Kadoshima teaches all of the claimed limitations recited in Claim 1. Wieczorek further teaches estimating (S3) the data communication needs of the mobile station (Column 3 lines 65 – 67).

Regarding Claim 8, Acampora in view of Wieczorek and in further view Kadoshima teaches all of the claimed limitations recited in Claim 7. Acampora further teaches the data communication needs exceed a specific amount of data to be communicated (Column 3 lines 37 – 47, if the data communication needs exceed a specific amount of data to be communicated some or all of the conditions (1 – 4) will not be met thus the mobile unit will not be admitted).

Regarding Claim 9, Acampora in view of Wieczorek and in further view Kadoshima teaches all of the claimed limitations recited in Claim 5. Wieczorek further teaches wherein the mobile station executes measurements of the traffic load distribution in the area and along the path in which it is moving (Column 4 lines 27 – 31, subscriber environment information comprises traffic load), and wherein the available capacity of the current and future locations of the mobile station is estimated on the basis of the measurement results (Column 3 lines 31 – 37).

Regarding Claim 10, Acampora in view of Wieczorek and in further view
Kadoshima teaches all of the claimed limitations recited in Claim 7. Acampora further
teaches buffering data transmitted to and from the mobile station (1) (Column 4 lines 40
– 48, the mobile unit can transmit and receive packets of data thus there must be a
buffer for said data packets), wherein the estimation of the data communication needs
of the mobile station (1) is performed by monitoring the amount of buffered data
(Column 3 lines 37 – 47, if the amount of data packets exceeds a specific level some or
all of the conditions (1 – 4) will not be met thus the mobile unit will not be admitted).

Regarding Claim 11, Acampora in view of Wieczorek and in further view
Kadoshima teaches all of the claimed limitations recited in Claim 7. Acampora further
teaches wherein the data communication needs of the mobile station are estimated on
the basis of a transmission request from the mobile station (Column 3 lines 31 – 37, the
data communication needs must meet the conditions (1 – 4) or the mobile unit will not
be admitted).

Regarding Claim 12, Acampora in view of Wieczorek and in further view
Kadoshima teaches all of the claimed limitations recited in Claim 9. Wieczorek further
teaches wherein the mobile station executes the measurements according to traffic load
distribution information received from the network (Column 4 lines 27 – 31, the
subscriber environment information comprises traffic load).

Regarding Claim 13, Acampora in view of Wieczorek and in further view
Kadoshima teaches all of the claimed limitations recited in Claim 1. Acampora further
teaches wherein a plurality of mobile stations each having data communication needs

are present in the network, and wherein the data communications of the plurality of

mobile stations are scheduled in accordance with the available capacity of the network

(Column 3 lines 24 – 55).

Regarding Claim 14, Acampora in view of Wieczorek and in further view

Kadoshima teaches all of the claimed limitations recited in Claim 13. Acampora further

teaches wherein the data communications of the plurality of mobile stations are

scheduled in accordance with estimated data communication needs of these mobile

stations (Column 3 lines 31 – 37, the data communication needs must meet the

conditions (1 – 4) or the mobile unit will not be admitted).

Regarding Claim 15, Acampora teaches a telecommunication system for

communicating data in a cellular telecommunication network in which the available

capacity is not uniformly distributed, comprising: control means communicating with a

mobile station and the cellular telecommunication network, for scheduling the data

communication to or from the mobile station in accordance with the available capacity of

the network at the current and future locations of the mobile station (Column 3 lines 24

– 55, there is a cluster of cells thus there will be current and future locations), wherein

the data communication to or from the mobile station at the current location of the

mobile station is not scheduled by the control means when the available capacity at

future locations is less than that at the current location (Column 3 lines 24 – 55, the

capacity of the whole cell cluster comprises the capacity at the current location or cell of

the mobile station and the capacity at the other locations or cells, which are the future

locations of said mobile station moving within said cell cluster), and wherein the data

communication to or from the mobile station at the current location of the mobile station
is scheduled by the control means when the available capacity at future locations is
higher than that at the current location (Column 3 lines 24 – 55, the capacity of the
whole cell cluster comprises the capacity at the current location or cell of the mobile
station and the capacity at the other locations or cells, which are the future locations of
said mobile station moving within said cell cluster).

Acampora does not teach a control means for tracking the locations of a mobile
station moving in the cellular telecommunication network.

Wieczorek teaches a control means for tracking the locations of a mobile station
moving in the cellular telecommunication network (Column 3 lines 25 – 31).

Acampora and Wieczorek both teach a wireless cellular system thus it would
have been obvious to one of ordinary skill in the art at the time the invention was made
to use the tracking method taught above in Wieczorek in the wireless system of
Acampora for the purpose of enabling the allocation of communication resources to
accommodate differing loading conditions as mobile units move within a coverage area
supported by different server sites.

Acampora in view of Wieczorek does not teach the prioritizing and delaying the
mobile station.

Kadoshima teaches prioritizing and delaying the mobile station (Column 16 lines
46 – 48, the mobile station with the highest priority will be allowed to place a call first
when the network is congested and the mobile stations with the lower priorities will be

allowed to place a call later than or after the highest priority mobile station thus said lower priority mobile stations will be delayed in placing calls during network congestion).

Acampora in view of Wieczorek and Kadoshima teach a wireless cellular system thus it would have been obvious to one of ordinary skill in the art at the time the invention was made to use the prioritizing and delaying method taught in Kadoshima in the wireless system of Acampora in view of Wieczorek for the purpose of enabling a mobile user to communicate with a destination mobile terminal in an emergency despite congestion in the wireless network.

Regarding Claim 16, Acampora in view of Wieczorek and in further view Kadoshima teaches all of the claimed limitations recited in Claim 15. Wieczorek further teaches the control means estimating the future locations of the mobile station on the basis of tracked locations (Column 3 lines 56 – 64).

Regarding Claim 17, Acampora in view of Wieczorek and in further view Kadoshima teaches all of the claimed limitations recited in Claim 15. Wieczorek further teaches the control means estimating the future locations of the mobile station on the basis of route information about the moving mobile station provided by the mobile station (Column 3 lines 32 – 37, lines 56 - 64).

Regarding Claim 18, Acampora in view of Wieczorek and in further view Kadoshima teaches all of the claimed limitations recited in Claim 15. Wieczorek further teaches the control means estimating the future locations of the mobile station on the basis of movement patterns of the mobile station (Column 3 lines 56 – 64, the location history is a history of the movement patterns of the mobile station).

Regarding Claim 19, Acampora in view of Wieczorek and in further view Kadoshima teaches all of the claimed limitations recited in Claim 15. Wieczorek further teaches the control means estimating the available capacity of the network at the current and future locations of the mobile station on the basis of an estimated current and future traffic load distribution of the network in the area in which and towards the mobile station is moving (Column 2 lines 64 – 67, Column 3 line 1, Column 3 lines 65 – 67, the system estimates the loading conditions at the future site such that there will be proper allocation of communication resources).

Regarding Claim 20, Acampora in view of Wieczorek and in further view Kadoshima teaches all of the claimed limitations recited in Claim 19. Acampora further teaches wherein the area comprises cells, groups of cells, geographical areas and network nodes (Figure 1, the base stations (17a – 17n) are the network nodes).

Regarding Claim 21, Acampora in view of Wieczorek and in further view Kadoshima teaches all of the claimed limitations recited in Claim 15. Wieczorek further teaches the control means estimating the data communication needs of the mobile station (Column 3 lines 65 – 67).

Regarding Claim 22, Acampora in view of Wieczorek and in further view Kadoshima teaches all of the claimed limitations recited in Claim 21. Acampora further teaches the data communication needs exceed a specific amount of data to be communicated (Column 3 lines 37 – 47, if the data communication needs exceed a specific amount of data to be communicated some or all of the conditions (1 – 4) will not be met thus the mobile unit will not be admitted).

Regarding Claim 23, Acampora in view of Wieczorek and in further view

Kadoshima teaches all of the claimed limitations recited in Claim 19. Wieczorek further

teaches wherein the mobile station executes measurements of the traffic load

distribution in the area and along the path in which it is moving (Column 4 lines 27 – 31,

subscriber environment information comprises traffic load), and wherein the control

means estimate the available capacity of the current and future locations of the mobile

station on the basis of the measurement results transmitted from the mobile station to

the control means (Column 3 lines 31 – 37).

Regarding Claim 24, Acampora in view of Wieczorek and in further view

Kadoshima teaches all of the claimed limitations recited in Claim 21. Acampora further

teaches the control means monitoring buffers for buffering data transmitted to and from

the mobile station (1) (Column 4 lines 40 – 48, the mobile unit can transmit and receive

packets of data thus there must be a buffer for said data packets), and estimate the

data communication needs of the mobile station (1) on the basis of the monitored

amount of buffered data (Column 3 lines 37 – 47, if the amount of data packets exceeds

a specific level some or all of the conditions (1 – 4) will not be met thus the mobile unit

will not be admitted).

Regarding Claim 25, Acampora in view of Wieczorek and in further view

Kadoshima teaches all of the claimed limitations recited in Claim 21. Acampora further

teaches wherein the control means estimate the data communication needs of the

mobile station on the basis of a transmission request from the mobile station (Column 3

lines 31 – 37, the data communication needs must meet the conditions (1 – 4) or the

mobile unit will not be admitted).

Regarding Claim 26, Acampora in view of Wieczorek and in further view

Kadoshima teaches all of the claimed limitations recited in Claim 23. Wieczorek further

teaches wherein the mobile station executes the measurements according to traffic load

distribution information received from the network (Column 4 lines 27 – 31, the

subscriber environment information comprises traffic load).

Regarding Claim 27, Acampora in view of Wieczorek and in further view

Kadoshima teaches all of the claimed limitations recited in Claim 15. Acampora further

teaches wherein a plurality of mobile stations each having data communication needs

are present in the network, and wherein the data communications of the plurality of

mobile stations are scheduled in accordance with the available capacity of the network

(Column 3 lines 24 – 55).

Regarding Claim 28, Acampora in view of Wieczorek and in further view

Kadoshima teaches all of the claimed limitations recited in Claim 27. Acampora further

teaches wherein the data communications of the plurality of mobile stations are

scheduled in accordance with estimated data communication needs of these mobile

stations (Column 3 lines 31 – 37, the data communication needs must meet the

conditions (1 – 4) or the mobile unit will not be admitted).

Conclusion

4.   **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time

policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE

MONTHS from the mailing date of this action. In the event a first reply is filed within

TWO MONTHS of the mailing date of this final action and the advisory action is not

mailed until after the end of the THREE-MONTH shortened statutory period, then the

shortened statutory period will expire on the date the advisory action is mailed, and any

extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

the advisory action. In no event, however, will the statutory period for reply expire later

than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the

examiner should be directed to Raymond S Dean whose telephone number is 703-305-

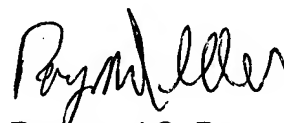8998. The examiner can normally be reached on 7:00-3:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, Nay A Maung can be reached on 703-308-7745. The fax phone number for

the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the
Patent Application Information Retrieval (PAIR) system. Status information for
published applications may be obtained from either Private PAIR or Public PAIR.
Status information for unpublished applications is available through Private PAIR only.
For more information about the PAIR system, see http://pair-direct.uspto.gov. Should
you have questions on access to the Private PAIR system, contact the Electronic
Business Center (EBC) at 866-217-9197 (toll-free).

Raymond S. Dean
March 23, 2005

NICK CORSARO
PRIMARY EXAMINER